

AMENDMENTS TO THE CLAIMS:

Please amend the claims as follows:

Claims 1-15 (canceled)

16. (Currently Amended) A crystalline silicon film forming method comprising the steps of:

preparing a film forming apparatus having a single silicon film forming vacuum chamber for forming a crystalline silicon film on a substrate, and provided with a film forming device for forming a pre-film of the crystalline silicon film on a target surface of said substrate, and an energy beam irradiating device for irradiating said pre-film with an energy beam for crystallizing said pre-film;

locating the substrate in said silicon film forming vacuum chamber, and forming the pre-film of the crystalline silicon film on the target surface of said substrate by said film forming device; and

producing the intended crystalline silicon film from said pre-film by irradiating said pre-film in said vacuum chamber with said energy beam for crystallization of said pre-film emitted from said energy beam irradiating device subsequently to the formation of said pre-film;

wherein the method is conducted without dehydrogenation processing.

17. (Currently Amended) A ~~[[The]]~~ crystalline silicon film forming method comprising the steps of:

preparing a film forming apparatus having a single silicon film forming vacuum chamber for forming a crystalline silicon film on a substrate, and provided with a film forming device for forming a pre-film of the crystalline silicon film on a target surface of said substrate, and an energy beam irradiating device for irradiating said pre-film with an energy beam for crystallizing said pre-film;

locating the substrate in said silicon film forming vacuum chamber, and forming the pre-film of the crystalline silicon film on the target surface of said substrate by said film forming device; and

producing the intended crystalline silicon film from said pre-film by irradiating said pre-film in said vacuum chamber with said energy beam for crystallization of said pre-film emitted from said energy beam irradiating device subsequently to the formation of said pre-film according to claim 16, wherein

said film forming device employs such a structure that can form said pre-film over a length, in a first direction, of the target surface of said substrate, said energy beam irradiation device employs such a structure that can irradiate the target surface of said substrate over the length in the first direction with the energy beam, and the intended crystalline silicon film can be successively formed by operating said film forming device to form said pre-film on the target surface of said substrate, and concurrently operating said energy beam irradiation device to irradiate the formed pre-film with the energy beam while moving said substrate in a second direction crossing said first direction.

18. (Original) The crystalline silicon film forming method according to claim 16, wherein

said silicon film forming vacuum chamber is further provided with an ion source, and said pre-film of the crystalline silicon film is formed on said target surface while emitting an ion beam to the target surface of said substrate in said step of forming said pre-film by said film forming device.

19. (Original) The crystalline silicon film forming method according to claim 17, wherein

said silicon film forming vacuum chamber is further provided with an ion source, and said pre-film of the crystalline silicon film is formed on said target surface while emitting an ion beam to the target surface of said substrate in said step of forming said pre-film by said film forming device.

20. (Original) The crystalline silicon film forming method according to claim 16, wherein

said silicon film forming vacuum chamber is further provided with an ion source, an ion beam is emitted to the target surface of said substrate from said ion source prior to said step of forming said pre-film by said film forming device, and said pre-film is formed on said target surface irradiated with the ion beam.

21. (Original) The crystalline silicon film forming method according to claim 17, wherein

said silicon film forming vacuum chamber is further provided with an ion source, an ion beam is emitted to the target surface of said substrate from said ion source prior

to said step of forming said pre-film by said film forming device, and said pre-film is formed on said target surface irradiated with the ion beam.

22. (Original) The crystalline silicon film forming method according to claim 16, wherein

said silicon film forming vacuum chamber is further provided with an ion source, and an ion beam is emitted to the target surface of said substrate from said ion source in an initial stage of said step of forming said pre-film by said film forming device.

23. (Original) The crystalline silicon film forming method according to claim 17, wherein

said silicon film forming vacuum chamber is further provided with an ion source, and an ion beam is emitted to the target surface of said substrate from said ion source in an initial stage of said step of forming said pre-film by said film forming device.

24. (Original) The crystalline silicon film forming method according to claim 16, wherein

said silicon film forming vacuum chamber is further provided with an ion source, and an ion beam is emitted to the target surface of said substrate from said ion source during a period from a stage before said pre-film forming step of forming said pre-film by said film forming device to an initial stage of said pre-film forming step.

25. (Original) The crystalline silicon film forming method according to claim 17, wherein

said silicon film forming vacuum chamber is further provided with an ion source, and an ion beam is emitted to the target surface of said substrate from said ion source during a period from a stage before said pre-film forming step of forming said pre-film by said film forming device to an initial stage of said pre-film forming step.

26. (Original) The crystalline silicon film forming method according to claim 18, wherein

an emission energy of said ion beam is in a range from 100 eV to 1 keV.

27. (Original) The crystalline silicon film forming method according to claim 20, wherein

an emission energy of said ion beam is in a range from 500 eV to 10 keV.

28. (Original) The crystalline silicon film forming method according to claim 22, wherein

an emission energy of said ion beam is in a range from 500 eV to 10 keV.

29. (Original) The crystalline silicon film forming method according to claim 22, wherein

an emission energy of said ion beam is in a range from 2 keV to 10 keV.

30. (Currently Amended) The crystalline silicon film forming method according to claim 25, wherein

an emission energy of said ion beam is in a range from 500eV to 10keV ~~500eV to 40KeV~~.

31. (Original) The crystalline silicon film forming method according to claim 18, wherein

said film forming device employs a structure performing the film formation by plasma CVD.

32. (Original) The crystalline silicon film forming method according to claim 31, wherein

the formation of the pre-film by said plasma CVD uses a mixture gas of a silicon-contained gas and a hydrogen gas as a gas for film formation.